

What is claimed is:

1. A video endoscope apparatus comprising:

a light source unit that alternately emits white light covering the full range of visible region and excitation light to excite living tissue;

a video endoscope that has an insertion tube, a color image sensor and a light guide for guiding the white light and the excitation light from said light source unit to a distal end of said insertion tube;

an image data acquiring section that acquires normal observation image data captured by said color image sensor when said light source unit emits the white light and acquires excitation observation image data captured by said color image sensor when said light source section emits the excitation light;

a first image processing section that processes said normal observation image data only acquired by said image data acquiring section;

a second image processing section that extracts one color component image data as reference image data from said normal observation image data acquired by said image data acquiring section, extracts one color component image data as fluorescent image data from said excitation observation image data acquired by said image data acquiring section, calculates a difference between a brightness value of a pixel in said reference image

data and a brightness value of the pixel at the same coordinate in said fluorescent image data for every pixel and generates affected part information by specifying the coordinates whose differences are larger than the predetermined threshold value;

an image data generating section that generates image data for displaying a special observation image by converting said normal observation image data based on said affected part information so that the values of the pixels specified by said affected part information in said normal observation image data are converted into a predetermined level corresponding to a predetermined color; and

an output section that outputs said image data generated by said image data generating section.

2. The video endoscope apparatus according to claim 1, wherein said second image processing section generates three color component signals R, G and B by a calculation using a conversion determinant shown in the following formula:

$$\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} R' \\ G' \\ B' \end{bmatrix}$$

where

R' is one color differential signal,

G' is the other color differential signal, and

B' is a brightness signal.

3. The video endoscope apparatus according to claim 1, wherein said second image processing section generates three color component signals R, G and B by a calculation using a conversion determinant shown in the following formula:

$$\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} R' \\ G' \\ B' \end{bmatrix}$$

where

R' is one color differential signal,

G' is the other color differential signal, and

B' is a brightness signal.